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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
KIM, JENNIFER M	
ART UNIT	**PAPER NUMBER**
1617	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/623,114	MURTHY ET AL.	
	Examiner	Art Unit	
	Jennifer Kim	1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-48* is/are pending in the application.

4a) Of the above claim(s) *38-48* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/19/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed January 19, 2007 have been received and entered into the application.

It is noted that the numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

It is noted that claims 1-24 were pending in the originally presented Application and they are canceled by the amendment. However, newly added claims starting claims 26 are not numbered consecutively being with the number next following the highest numbered claims previously presented.

Therefore, misnumbered claims 26-49 have been renumbered as claims 25-48.

It is also noted that newly added claims 38-48 drawn to a method of treating a bacterial infection is withdrawn from consideration because they are non-elected invention. Accordingly, claims 25-34 are being examined.

Action Summary

The objection of claims 16 and 17 because of the informalities in previous Office Action is hereby expressly withdrawn in view of Applicants' amendment of canceling the claims.

The rejection of claim 1 under 35 U.S.C. 102(e) as being anticipated by Boojamra et al. (US 2006/0014743A1) of record is hereby expressly withdrawn in view of Applicant's amendment.

The rejection of claims 2-10 and 17 under 35 U.S.C. 103(a) as being unpatentable over Boojamra et al. (US 2006/0014743A1) of record further in view of LaColla et al. (U.S.Patent No. 6,710,068 B2) and Schoenleber et al. (U.S.Patent No. 5,158,948) is hereby expressly withdrawn in view of Applicants' amendment.

The rejection of claims 8-10 and 16 under 35 U.S.C. 103(a) as being unpatentable over Camaggi et al. (U.S.Patent No. 5,336,664) is hereby expressly withdrawn in view of Applicants' amendment.

Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 25-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Camaggi et al. (U.S.Patent No. 5,336,664) of record in view of Nagy (U.S.Patent No. 4,872,411).

Camaggi et al. teach that florfenicol compound of formula I, including **florfenicol propionate and florfenicol acetate** is useful in the composition for agricultural use as herbicides in the defense of useful crops from weeds. (abstract, columns 1-4, particularly column 4, lines 47-68). Camaggi et al. teach that the composition can be formulated with the carrier such as **water** (pharmaceutically acceptable carrier). (column 14, lines 61-66). Camaggi et al. teach tat the composition can comprise **one or more of the compounds of formula I** as active ingredient and a carrier beside optional additives of agricultural use. (column 14, lines 57-60). Camaggi et al. teach that combining two or more of the compounds of formula I are useful because it gives complementary herbicidal characteristics. (column 13, lines 60-65).

Camaggi et al. do not teach the injectable composition and the amounts of florfenicol set forth in claim 26.

Nagy teaches an applicator device for injecting additives such as herbicides that provides herbicides into the soil. (abstract). Nagy teaches the applicator device for injecting herbicides into the soil permits relatively accurate measurement of the amount of herbicides fed to the soil and it is relatively easy to operate. (column 1, lines 50-56).

It would have been obvious to one of ordinary skill in the art to formulate the composition comprising mixtures of one or more of the compounds of formula I including florfenicol propionate and florfenicol acetate as an injectable herbicides because Camaggi et al teach that combining two or more of the florfenicol compounds of formula I including the florfenicol propionate and florfenicol acetates provides complementary herbicidal characteristics, and because Nagy teaches the injectable applicator for herbicides permits accurate measurement of the amount of herbicides fed to the soil. Further, Nagy teaches the injectable applicator comprising herbicides is easy to operate. One would have been motivated to make such a modification in order to accurately and easily deliver a complementary herbicidal combination directly fed to soil with a precisely measured amounts of herbicides that is needed. There is a reasonable expectation of successfully formulating Camaggi et al's herbicide composition into an injectable because Nagy teaches the actual injectable device specifically for herbicide use that is suitable and relatively easy to operate and deliver an accurate amount needed. Further, the amounts of herbicides to be injected into the soil is deemed obvious since it is well within the knowledge of one of the skilled artisan in an agricultural art. With regard to the property of the composition forms a drug depot when injected into a mammal set forth in claim 31, it is noted that Camaggi et al. teach the products of identical chemical compositions and excipients as recited in claim 25, therefore, Camaggi et al's composition can not have mutually exclusive properties. Therefore, it would have been obvious to one of ordinary skill in the art to conclude that upon the accidental injection of the composition taught by Camaggi et al. to a mammal

would form **a drug depot** since the composition has the same exact component as recited in claim 25.

Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Camaggi et al. (U.S.Patent No. 5,336,664) of record in view of Nagy (U.S.Patent No. 4,872,411) and further in view of Highsmith et al. (U.S.Patent No. 2002/0065198 A1).

Camaggi et al. as applied as before and additional teaching as follows:

Camaggi et al. teach that the additives optionally present depend on the type of composition can be selected among, e.g. wetting agents, adhesives, suspending agents, solubilizing agents, surfactants and dyes. (column 14, line 67- column 15, line 2).

Nagy as applied as before.

Camaggi et al. and Nagy do not teach the propylene glycol.

Highsmith et al. teach that concentrated glycol suspensions of agricultural materials have superior stability and pour properties and that upon dilution in a suitable volume of water, are suitable for application to plants as herbicidal compositions. ([0003]). Highsmith et al. teach that the suspending liquids are advantageous in that they have the potential to facilitate dispersion and dissolution of suspended solids and propylene glycol is approved for agricultural use. ([0013]).

It would have been obvious to one of ordinary skill in the art to employ propylene glycol to Camaggi et al's composition as modified by Nagy because Camaggi et al. teach that any of the additives including suspending agents or solubilizing agents can

be employed in the florfenicol composition and because propylene glycol is a suspending agent advantageously facilitate dispersion and dissolution of suspended solids. Further, propylene glycol is approved for agricultural use as taught by Highsmith et al. One would have been motivated to employ propylene glycol to Camaggi et al's composition as modified by Nagy in order to achieve superior herbicidal composition exhibiting superior stability and pour properties by adding glycol suspension as taught by Highsmith et al.

Claims 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shuster et al. (US 2004/0198704 A1).

Shuster et al. teach novel formulation comprising a compound having structural formula I of florfenicol and its **ester derivatives** e.g. 1-hydrocarboncaroxylates of the formula I wherein Z is an **acyl group of a hydrocarboncarboxylic acid** having **up to 16 carbon atoms** that may be saturated, unsaturated, straight chain or **branched chain**. (pages 2-4, [0019], [0027], [0047], [0048], [0049]) This formula encompasses Applicant's florfenicol butyrate recited in claim 34. Shuster et al. teach the composition can be formulated with pyrrolidone solvents such as N-methyl-2-pyrrolidone and 2-pyrrolidone or glycerol format or propylene glycol, polyethylene glycol, ethanol and DMSO. (page 6 [0077]). Shuster et al. teach that the concentration of florfenicol typically is from about 10% to about 50% w/v, with the preferred level between about 20% and about 40%. (page 4, [0056]). This range of the concentration encompasses Applicants' concentration recited in claim 37. Shuster et al. teach that the formulation is useful for treating bacterial infection of cattle and other animals. (page 2 [0016]).

Shuster et al. teach that the formulation can be administered by injection. ([0075]). Shuster et al. teach that the precise dose to be administered depend on the stage and severity of the infection and the individual characteristics of the animal species being treated, as will be appreciated by the one of ordinary skill in the art. (page 7, [0089]).

Shuster et al. do not expressly teach the specific ester of florfenicol, florfenicol butyrate, and the specified concentration.

It would have been obvious to one of ordinary skill in the art to formulate an ester derivative of florfenicol including florfenicol butyrate with the effective concentration recited in claim 37 because Shuster et al. teach that the ester derivatives of florfenicol are useful as a formulation for treating antibacterial infection of cattle and other animals with the concentrations recited in claim 37 and because Shuster et al. teach any of its ester derivatives including 1-hydrocarboncaroxylates of the formula I wherein Z is an acyl group of hydrocarboncarboxylic acid having up to 16 carbon atoms with branches chain is useful. Absent any evidence to contrary, there would have been a reasonable expectation of successfully formulating any one of ester derivatives of florfenicol including florfenicol butyrate encompassed by the general teaching of Shuster et al. as a branched hydrocarboncarboxylic acid having up to 16 carbon atoms.

Applicants' Example 8 and Fig.8 of the instant Application demonstrating the administration of florfenicol butyrate compared to NuFlor results has been carefully considered, while the results show the administration of florfenicol butyrate have different distribution profile, this does not appear to correlate with surprising and

unexpected pharmacological activity without the side by side compared numeric data showing statistically significant results in pharmacological activity.

For these reasons the claimed subject matter is deemed to fail to patentably distinguish over the state of the art as represented by the cited references. The claims are therefore properly rejected under 35 U.S.C. 103.

None of the claims are allowed.

Response to Arguments

Applicants' arguments filed January 19, 2007 have been fully considered but they are not persuasive. Applicants argue that Camaggi does not render the new claims obvious because the new claims are directed to compositions that include a combination of a first ester prodrug of florfenicol and a second ester prodrug of florfenicol but there is no disclosure or suggestion in Camaggi to make a combination of two ester prodrug of florfenicol as claimed in claims 25-33. This is not persuasive because Camaggi teaches that the composition comprising mixtures of one or more of the compounds of formula I including florfenicol propionate and florfenicol acetate useful as herbicides and Camaggi teaches that when combining two or more of these florfenicol compound provides complementary herbicidal characteristics. Applicants argue that that Camaggi provides no reasonable expectation that such a combination would successfully provide a therapeutically more effective product and a safer product

or have the unexpected advantages. This is not persuasive because there is a reasonable expectation of successfully formulating herbicidal composition with complementary herbicidal characteristics by combining two or more of the compounds taught by Camaggi et al. because this benefit is clearly taught by Camaggi et al.

The declaration filed under 37 C.F.R. 1.132 have been carefully reviewed and considered. However, it is not persuasive because the data for the administration of florfenicol butyrate to cats by subcutaneous injection at a dose of 120mg/kg results in fewer and less severe adverse effects can not be determined since no comparative experimental recorded results could be found. Therefore, the Examiner cannot determine the surprising and unexpected result of florfenicol butyrate compared to NuFlor. Applicants argue that the Example 8 and Fig 8 of the instant Application demonstrate the administration of florfenicol butyrate results in better pharmacological profile and less toxic than administration of florfenicol. Again, Applicants alleged florfenicol butyrate compared to NuFlor resulting in less toxic effect due to its better pharmacological profile can not be determined because there is no statistically significant side by side compared numeric data comparing severity of adverse effects in two active compounds. Thus, the claims fail to patentably distinguish over the state of the art as represented by the cited references.

Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Kim whose telephone number is 571-272-0628. The examiner can normally be reached on Monday through Friday 6:30 am to 3 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreenivasan Padmanabhan can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jennifer Kim
Patent Examiner
Art Unit 1617

Jmk
March 31, 2007